

Looking Beyond Rails

SI539 - Charles Severance

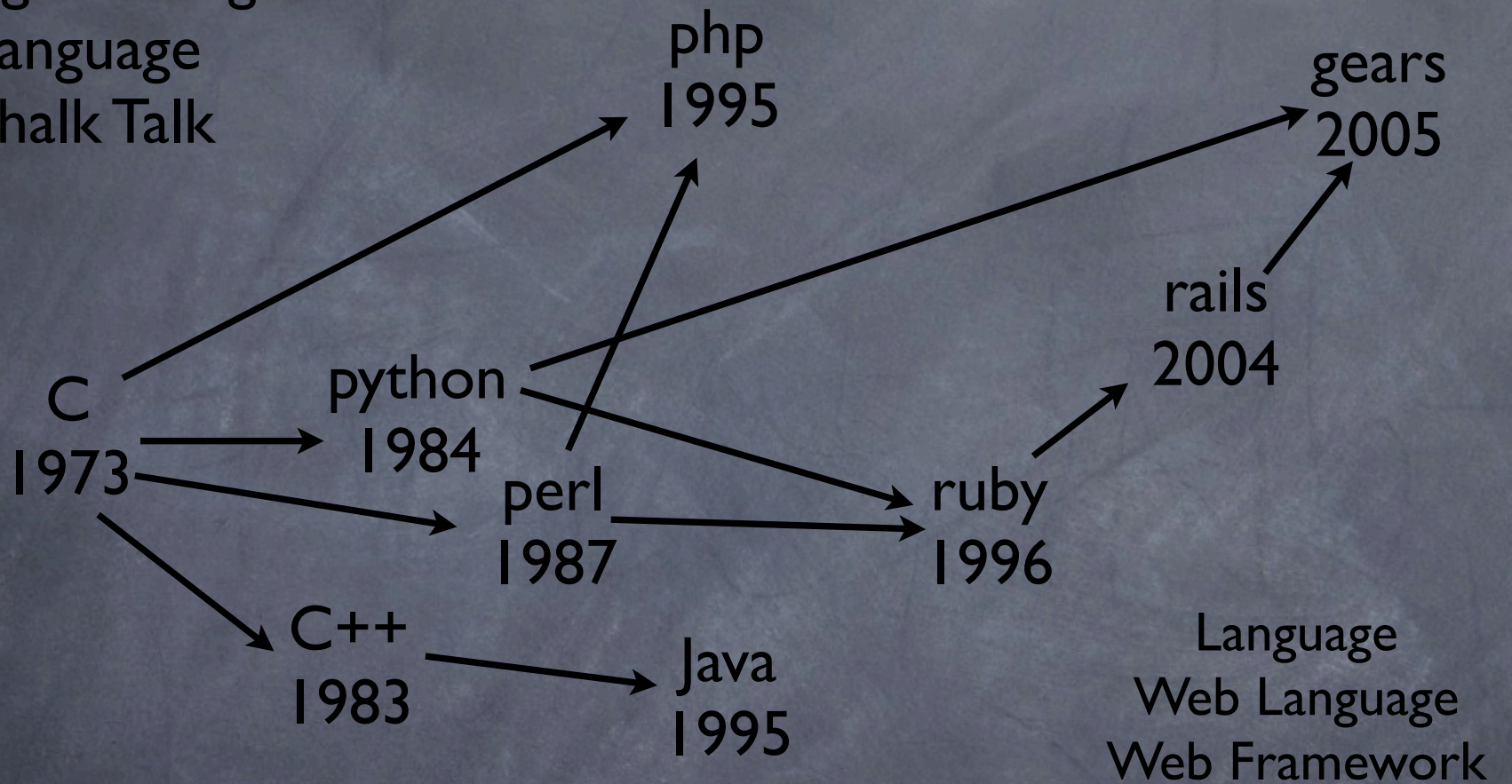
Outline

- Why Ruby on Rails?
- Programming Languages - Beyond Ruby
- Database Access using Structured Query Language
- Web Frameworks - Beyond Rails
 - The major shift in thinking w.r.t frameworks caused by Rails

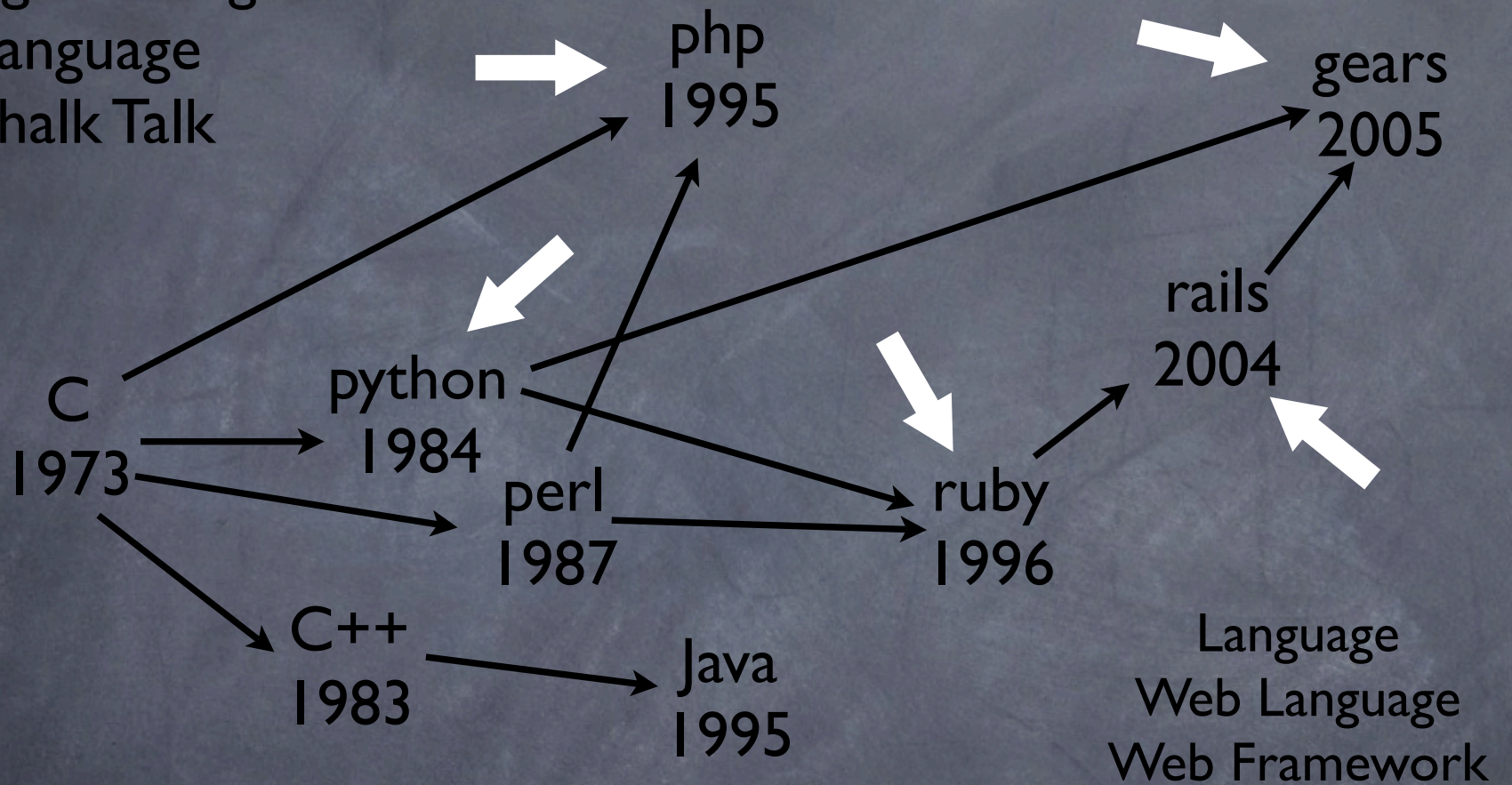
Why Ruby on Rails?

- Very popular emerging web framework
- Excellent for quickly building new applications of moderate complexity without having to restructure the program as it grows
- Starts with best practices baked in
- Comes quite complete out of the box

Programming
Language
Chalk Talk



Programming
Language
Chalk Talk



Variables and Lines

Ruby

```
lasalle = 5  
lasalle = lasalle + 1  
puts lasalle
```

Python

```
lasalle = 5  
lasalle = lasalle + 1  
print lasalle
```

PHP

```
<?php
```

```
$lasalle = 5;  
$lasalle = $lasalle + 1;  
print $lasalle . "\n";
```

```
?>
```

Ruby and Python are similar
PHP likes \$ for variables and
ends lines with ;
PHP uses a “line end character”.

Ruby

```
abc = 12
if abc < 12 or abc > 15 then
  puts "yes"
else
  puts "no"
end
```

Python

```
abc = 12
if abc < 12 or abc > 15 :
    print 'yes'
else :
    print 'no'
```

PHP

```
<?php

$abc = 12;
if ( $abc < 10 || $abc > 15 ) {
    print "yes\n";
} else {
    print "no\n";
}

?>
```

PHP uses braces for blocks
Ruby uses end for blocks
Python uses colon : and
whitespace to indicate blocks

Ruby

```
for it in [0, 1, 2]  
  puts it  
end
```

Python

```
for it in [0, 1, 2] :  
    print it
```

PHP

```
<?php  
  
foreach ( array(0,1,2) as $it ) {  
    print $it . "\n";  
}  
  
?>
```

Python and Ruby have simpler
syntax for for loops.
Again we see braces, end and
indentation for blocks.

Python Versus Ruby

- Ruby was inspired by Python - Ruby wants to be a “better Python”
 - Improving the object oriented syntax (def methods)
- Whitespace is significant in Python
- Blocks are indicated by : and indentation instead of then - end
- The languages are very similar because Ruby was inspired by Python

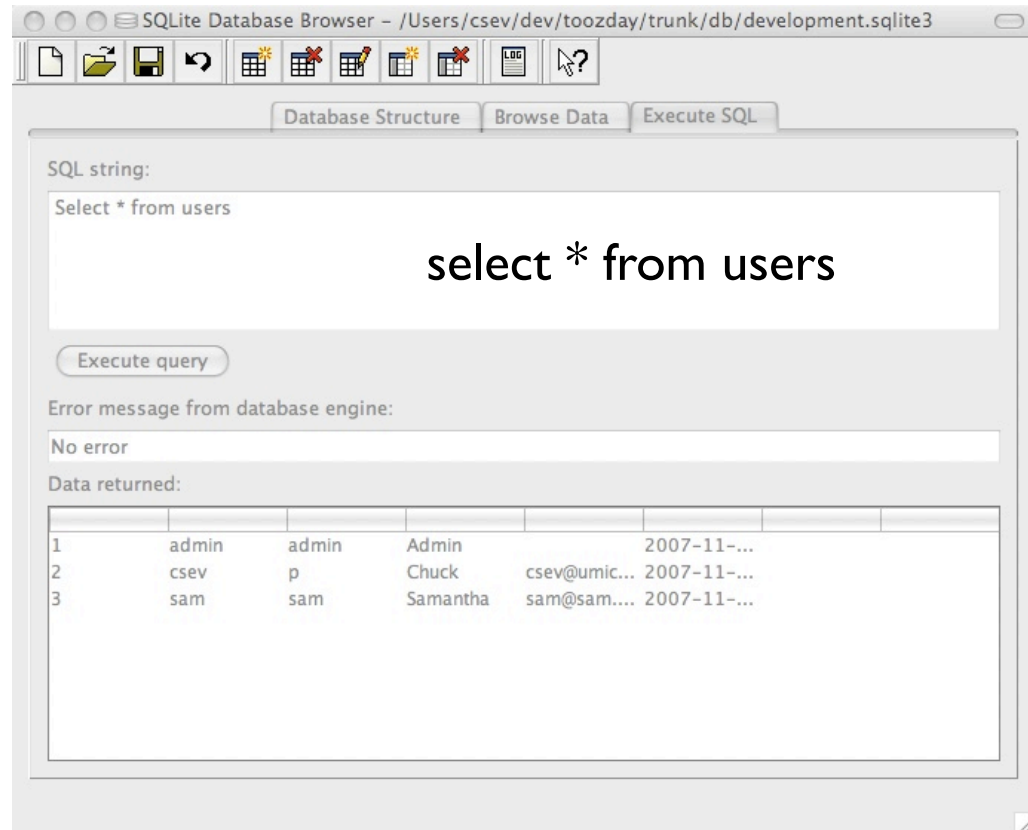
PHP versus Ruby

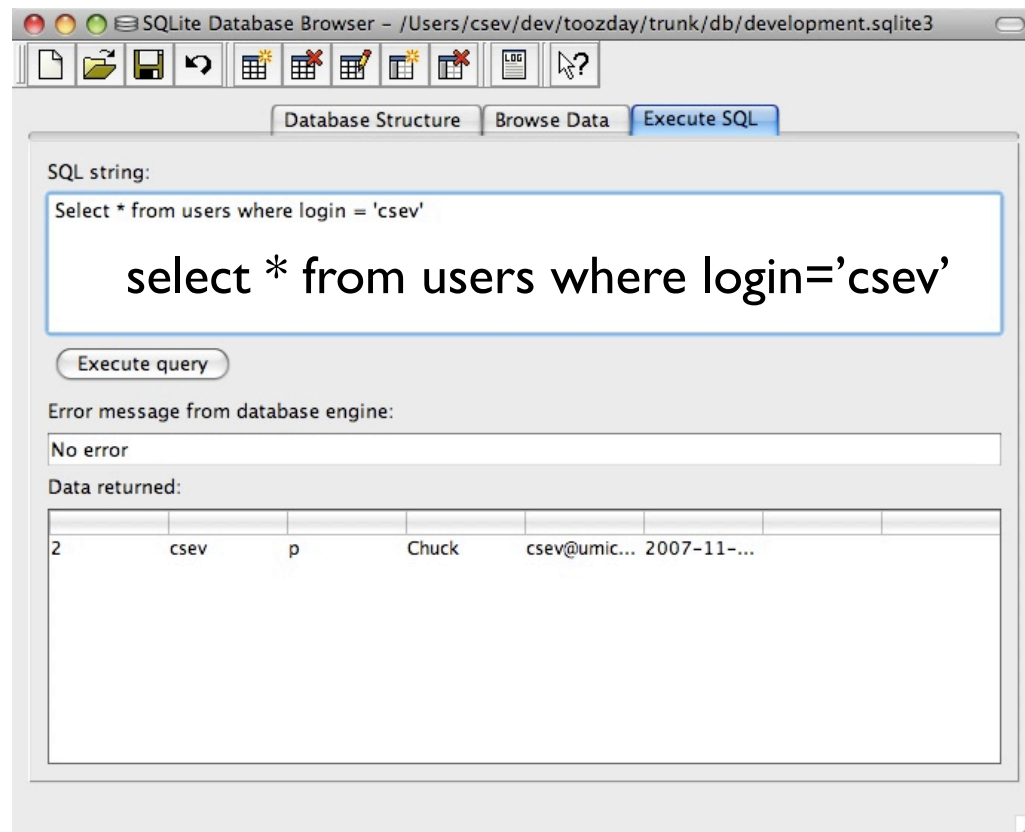
- A lot of syntax in PHP - Inspired by C
- Lines must end with semi-colon ;
- All variables start with dollar-sign
- Blocks begin and end with curly braces { }
- PHP takes inspiration from the C language

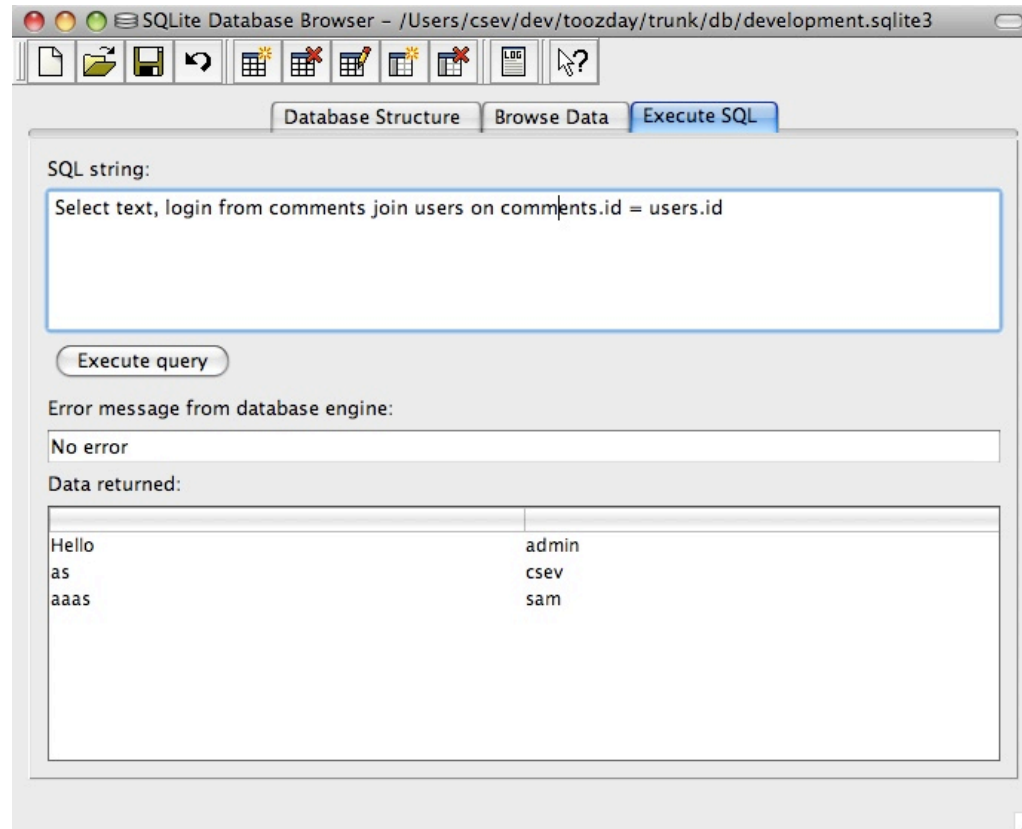
PHP and SQL

Structured Query Language

- While there are frameworks in PHP such as CakePHP or Akeleos, these are not commonly used
- PHP generally accesses the database directly using SQL rather than using a layer







`select text,login from comments join users on comments.id = users.id`

PHP and SQL

- In classic PHP, we connect to a database and issue an SQL query in the PHP view code
- SQL queries return “row sets”
- We loop through row sets much like we loop through arrays.
- SQL is very efficient but also non-portable across databases from different vendors :(
- Rails models provide “logical view” of databases as objects

```
<h1>User List</h1>
<table>
  <tr><th>User</th>
  <th>E-Mail</th></tr>
  <?php
    mysql_connect("localhost","dbacct","abc123");
    mysql_select_db("development");
    $userlist = mysql_query("select * from users");
    while ($row = mysql_fetch_assoc($userlist)) {
      print "<tr><td>$row[name]</td>";
      print "<td>$row[email]</td></tr>";
    }
  ?>
</table>
```

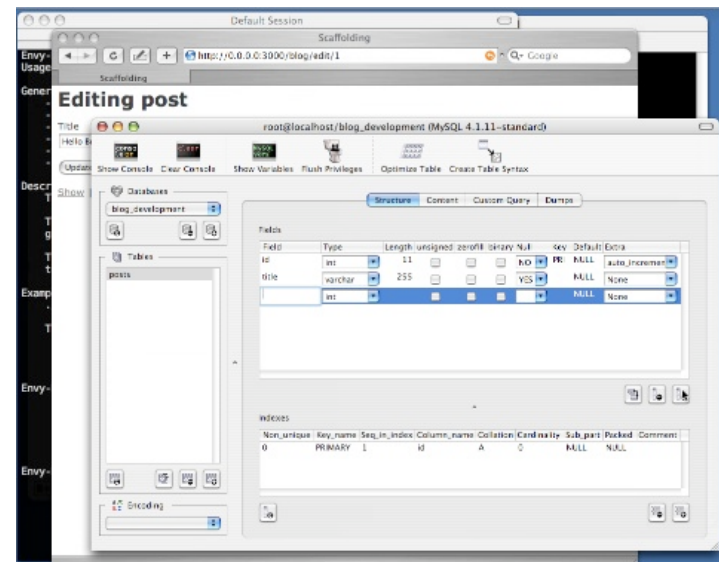
Web Frameworks

Web Frameworks

- Rails showed a new way of thinking about database persistence and how to store and retrieve data from the database
- Rails showed that Object-Relational-Mapping did not have to be difficult

Twenty Minute Blog - Rails

- David Heinemeier Hansson
- To some degree this is a “throw down” - other frameworks have been “served”
- He uses an early version of Rails
 - no migrations
- The use of scaffolding



<http://www.rubyonrails.org/screencasts>

Akelos - www.akelos.org

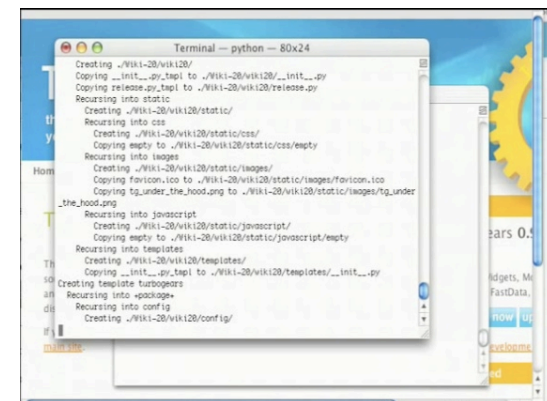
- An imitation of everything that Rails does with the PHP language
- There are subtle differences
- You should feel very comfortable other than the PHP language
- Bermi Fener - Barcelona

<http://www.akelos.org/screencasts>





- Written in Python
- Very much follows “Don’t Repeat Yourself” and “Convention over Configuration”
- Slightly different approaches when compared to Rails



<http://showmedo.com/videos/series?name=TurboGears20MinWiki>

Please Watch Three Videos

- Ruby on Rails 20 minute Blog - The Throw-down
 - <http://www.rubyonrails.org/screencasts>
- Akelos - PHP - Rails Style
 - <http://www.akelos.org/screencasts>
- TurboGears - Python - direct competitor to Rails
 - <http://showmedo.com/videos/series?name=TurboGears20MinWiki>

Concepts

- Be able to recognize a code sequence as coming from Rails, Python, or PHP
- Be able to describe the difference between a web framework like Akelos, Rails, or Turbogears and a language like Ruby, Python, or Php

A Quick Introduction to PHP

PHP is a View Language

- While frameworks like Akelos mold PHP into a Model-View-Controller environment, this is not typical of the billions of lines of existing PHP code which you will encounter
- Most PHP programming is done in the view - effectively in Rails it is as if the whole language were the .rhtml files and PHP is like ERB. The PHP files are effectively view files.
- If you enter a PHP project - do not expect them to use something like Akelos - expect them to do view programming in PHP files.

RHTML .vs. PHP

```
<h1>Header One</h1>
<p>
Hello
<%
  i = 4
  i = i + 3
%>
<%= i %>
There
</p>
```

```
<h1>Header One</h1>
<p>
Hello
<?php
  $i = 4;
  $i = $i + 3;
  print $i . "\n";
?>
There
</p>
```

Controller/View versus PHP

```
def x
  if params[:pw] == "secret"
    @msg = "Good guess"
  else
    @msg = "Try Again"
  end
end
```

```
<p>
Guess: <%= @msg %>
</p>
```

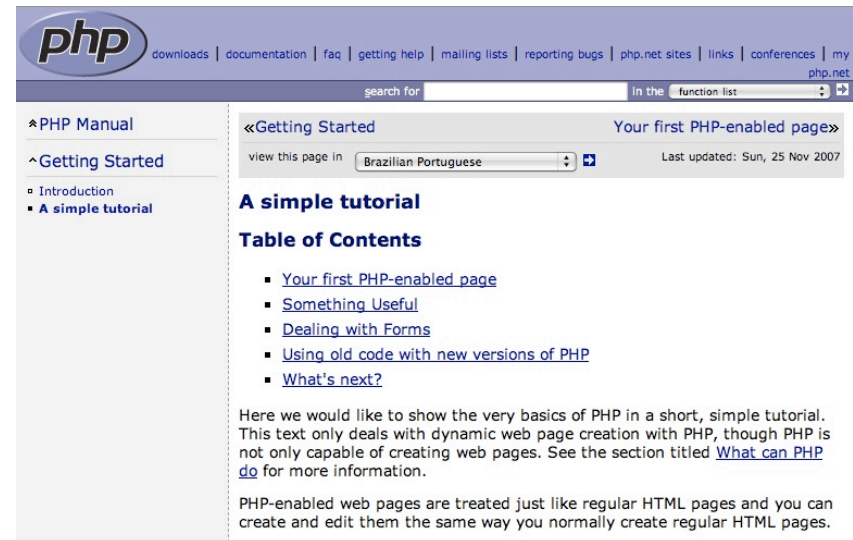
<http://localhost:3000/One/x?pw=secret>

<http://localhost/~csev/fun.php?pw=secret>

```
<p>Guess:
<?php
if ( $_REQUEST['pw'] == 'secret' ) {
  print "Good guess";
} else {
  print "Try Again";
}
?>
</p>
```

Learning PHP

- Many books
- Great Sample code - all over the web
- www.php.net/tut.php
- Google: php tutorials



Advantages

- PHP

- Widely available
- Inexpensive hosting
- Many developers with experience
- Many books
- Great for small projects

- Ruby / Rails

- Ruby has a cleaner syntax
- Even the simplest application is organized in a professional manner
- Can build more complex applications with less attention to adjusting the application structure as the code base grows

Summary

- Rails is a very strong web framework
- Rails has had a great deal of influence on the creation of other web frameworks in other languages
- PHP is still by far the most popular and it is good to know PHP as well as Ruby in the real world